



Office of Ocean Exploration and Research (OER)
NOAA SHIP OKEANOS EXPLORER
2013 NORTHEAST U.S. CANYONS EXPEDITION FRAMEWORK



NOAA Ship *Okeanos Explorer* conducts operations in the northern Gulf of Mexico. Credit: NOAA *Okeanos Explorer* Program.

OVERVIEW – In July and August 2013, NOAA Ship *Okeanos Explorer* will follow-on to previous deep water Atlantic canyon mapping efforts by commencing the next steps in systematic ocean exploration – investigating deep water areas in and along the northeast canyons and seamounts off the U.S. East Coast. Like previous expeditions in the Sulawesi Sea, Galápagos Rift, Mid-Cayman Rise and Gulf of Mexico, NOAA will work with the scientific community and public to characterize unknown and poorly-known areas through telepresence-based exploration.

Operations will use the ship's deep water mapping systems, NOAA's new 6000m ROV, CTD rosette, and a high-bandwidth satellite connection for real-time ship to shore communications. ROV dives will include high-resolution *visual* surveys. No biological or geological samples will be collected. These expeditions will establish a baseline of information in the region to catalyze further exploration, research and management activities. Partnering with NOAA's Deep-Sea Coral Research and Technology Program, benthic seafloor characterization efforts will include exploration for deep-sea coral habitats.

GOALS – NOAA priorities for the Northeast U.S. Canyons Expedition include a combination of science, education, outreach, and data management objectives. They are:

- Explore the diversity of benthic habitats and features (e.g. canyons, seamounts, landslides, deep sea corals, seeps);
- Engage a broad spectrum of the scientific community and public in telepresence-based exploration;
- Provide a foundation of publicly accessible data and information products to spur further exploration, research, and management activities;
- Complete Atlantic Canyons Undersea Mapping Expeditions (ACUMEN) mapping effort (*see below for more*);
- Ground-truth acoustic seep data and characterize associated habitat; and
- Test and refine operating procedures and products.



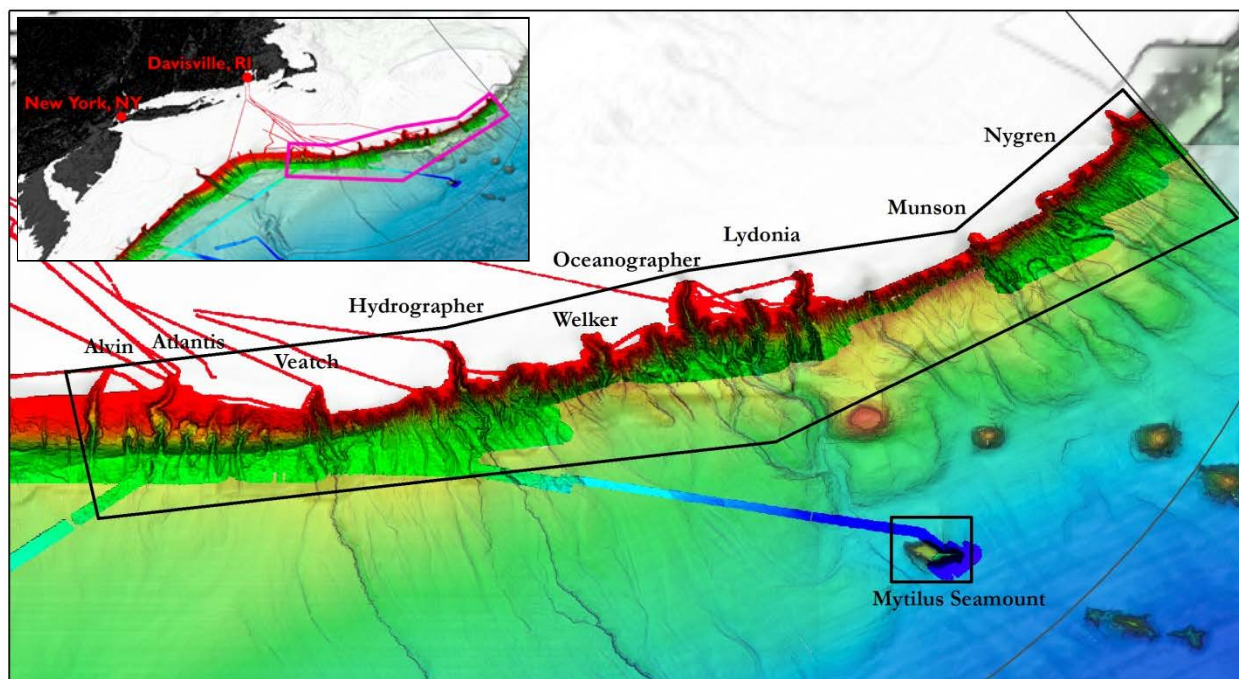
NOAA's new 6000m, two-body ROV will be used to acquire high definition visual data of unknown and poorly known areas during the 2013 Expedition.

PRIORITY AREAS - The 2013 Northeast U.S. Canyons Expedition operations will focus primarily on Northeast Canyons and inter-canyon areas, include limited exploration of Mytilus seamount, and conduct operations within the U.S. EEZ. The May 2011 NOAA Workshop on Systematic Telepresence-Enabled Exploration in the Atlantic Basin (Summary Report available at <http://explore.noaa.gov>) identified canyons and seamounts as priority areas for systematic ocean exploration. Operating areas were further refined based on priority area input from other NOAA

programs and the management community. The 2012 series of five Atlantic Canyons Undersea Mapping Expeditions (ACUMEN), and two *Okeanos Explorer* cruises since then gathered baseline information on deep water canyons off the northeastern U.S. seaboard, mapping along the continental shelf and slope from Virginia to the northeastern boundary of the U.S. Exclusive Economic Zone (EEZ). These mapping operations provide the basis for preliminary target selection.

SUPPORTING NOAA PRIORITIES:

Partnering with NOAA's Office of Habitat Conservation, Deep-Sea Coral Research and Technology Program, and Northeast Fisheries Science Center, the expedition will include exploration for deep-sea corals in the region, supporting the NOAA Habitat Blueprint's Northeast Regional Initiative and providing information in support of NOAA Fisheries. Operations to acquire data of unknown and poorly known areas supports NOAA missions to understand and predict changes in climate, weather, oceans and coasts, and share that knowledge and information with others.



Map showing general operating areas for the 2013 Northeast U.S. Canyons Expedition outlined in black. The operating areas encompass input from NOAA's Deep Sea Coral Program, NOAA Office of National Marine Sanctuaries, the Northeast Fisheries Management Council, Northeast Regional Council on the Ocean, Mid-Atlantic Regional Council on the Ocean states, and the U.S. Geological Survey. The grey line is the U.S. EEZ. All of the bathymetric data shown in the image is available for public review (<http://www.ngdc.noaa.gov>) in preparation for the cruise.

GENERAL OUTLINE - Leg I: July 8 - 25 / Leg II: July 31 - Aug 17

There will be two mapping, ROV and telepresence-enabled cruises in July and August. Leg I will depart from Davisville, RI on July 8 and conduct operations focused on the western portion of the operating area, pulling into New York, NY on July 25. Leg II will depart from New York, NY on July 31 and conduct operations focused on the eastern portion of the operating area, pulling into Davisville, RI on August 17. The daily schedule for both cruises will usually be split between daytime ROV operations (>500m) and evening/night CTD rosette and mapping operations.

HOW TO GET INVOLVED -

NOAA OER is currently identifying a core team of scientists interested in actively participating during the expedition. These scientists will work at shore-side Exploration Command Centers (ECC)

as full members of the science team and be responsible for standing watch during ROV dives, reviewing the latest data and information coming off the ship, providing input into a standard suite of products, and the day-to-day operations of the ship. This core team is expected to: 1) represent the broad interests of the science community; and 2) help identify and engage a community of shore-based explorers to contribute their expertise and observations in real-time. This team is complemented with scientists participating remotely. Anyone with an internet 2 connection can view and record the live high-definition video with their own systems as it is streamed to shore. Lower resolution video is available with a standard internet connection. Scientists can join the ongoing ship-to-shore science conversation by dialing into a teleconference and using instant messaging.

Anyone interested in viewing the internet 2 video feed will need assistance from their institution's IT network engineer. A test feed will be enabled for trouble-shooting purposes.

Additional information about *Okeanos Explorer* Program collaboration tools – including how to access the real-time video - is available at:

<http://tethys.gso.uri.edu/OkeanosExplorerPortal/portal-info>

FOR MORE INFORMATION -

If you are interested in getting involved with the 2013 Northeast U.S. Canyons Expedition, please contact Kelley Elliott at Kelley.Elliott@noaa.gov or 301-734-1204, or Brian Kennedy at Brian.Kennedy@noaa.gov or 401-874-6150.

Full May 2011 Atlantic Basin Workshop Report available at:

<http://explore.noaa.gov/summary-of-atlantic-basin-workshop-now-available>

NOAA Ship *Okeanos Explorer* Capabilities document available on pages 12-15 of:

http://www.tos.org/oceanography/archive/25-1_supplement.pdf

Learn more about NOAA OER's new 6000m ROV at:

http://oceanexplorer.noaa.gov/okeanos/explorations/ex1302/new_rov_video.html

Online website coverage of past telepresence-enabled *Okeanos Explorer* cruises:

- 2012 Northern Gulf of Mexico Expedition:
<http://oceanexplorer.noaa.gov/okeanos/explorations/ex1202/welcome.html>
- 2011 Mid-Cayman Rise Expedition:
<http://oceanexplorer.noaa.gov/okeanos/explorations/ex1104/welcome.html>